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EFFECTS OF INSTRUCTOR IMMEDIACY
AND STUDENT NEED FOR COGNITION
ON STUDENT MOTIVATION AND
PERCEPTIONS OF LEARNING

by

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B.S. University of Central Florida, 2004

A thesis submitted in partial fulfillment of the requirements
for the degree of Master of Arts
in the Nicholson School of Communication
in the College of Sciences
at the University of Central Florida
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ABSTRACT

This study built on previous literature linking instructor immediacy, student motivation, and student learning. The purpose of this research was to examine main and interaction effects of instructor immediacy and student trait motivation on student state motivation and cognitive learning. A main effect of instructor nonverbal immediacy on student state motivation and cognitive learning was found to be statistically significant. Further exploratory research did not yield statistical significance for a main effect of trait motivation, as measured by need for cognition, on student state motivation and cognitive learning, nor an interaction effect of immediacy and trait motivation on both state motivation and cognitive learning.

ACKNOWLEDGMENTS

I learned the most important life lesson from my mother, Loulou: If I want something badly enough, I can always find a way to make it work. She has always given me an extra push which has resulted in my success as our family's first college graduate and first woman to earn a graduate degree. Anyone in need of a sense of humor, tough love (make that VERY, tough love), or dose of willpower that puts boot camp soldiers to shame should spend some time with a woman who's figured out how to raise an entire family on her own.

I am also very proud to have a supportive family that always pushes me to do the right thing – even if it means not giving up on a (seemingly) forgotten thesis. My Tata Diane, stepfather Joe, brothers Liam, Cory, Dustin, and RJ, and boyfriend Lee supply enough love, reality, and comedy to make any intimidating task seem manageable. Their individual characters and strengths have always provided the extra advantage for me to overcome any moment of weakness.

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CHAPTER ONE: LITERATURE REVIEW

Introduction

People need motivation to accomplish a variety of goals. Without motivation, they are forced to otherwise rely on raw perseverance or we simply procrastinate until the task ‘goes away by itself’. However, complications arise when considering what motivates different kinds of students to follow through and accomplish academic goals that they set for themselves. For many, motivation can take the form of intangibles such as the adrenaline rush that is experienced when meeting tight deadlines, the perception of overwhelmingly compelling data, the attachment of emotions or affect to the goal, or tangibles such as financial or academic gain.

Some popular beliefs and researched findings on human behavior point to the tendency for people to behave in ways that will encourage others to like them. There are social influence benefits to being liked. Cialdini (2001) researched this concept to find that any research participants who liked a persuasion practitioner increased the practitioner’s ability gain compliance.

If different sources of motivation can be manipulated for persuasion and compliance, researchers should also be compelled to find instructional ways of applying this concept. The core of the research that follows in this paper lies in a particular application of liking and motivation in the education system.

It is hard to find a quality educator who has not yet come to learn the value of student motivation. Most realize that it is nearly impossible to teach someone who doesn’t want to be taught. In these situations, the job of a teacher is first to find individual sources of student

motivation in order to facilitate learning and success in course-related tasks. While it is still a student's responsibility and choice to behave in different ways, research has shown that an instructor's behavior can influence students' motivation and learning. One particular set of behaviors that fall into this category are those which foster immediacy (the perception of psychological closeness) (Andersen, 1978; Andersen, 1979; Christophel, 1990; Christophel & Gorham, 1995; Comstock, Rowell, & Bowers, 1995; Frymier, 1993; Hess & Smythe, 2001; Rocca, 2004; Teven & Hanson, 2004).

It would be unethical for educators to take tests for students, or simply ban educational assessment practices solely for the purpose of advancing a student through the education system. However, research shows that it is perfectly ethical and wholly encouraged to allow educators to continue to find ways to ensure that students perform at their best. If instructors know that there is a way to stimulate learning with immediate behaviors, why shouldn't researchers continue to devote research efforts to the study of immediacy?

Clearly, this thesis research on instructor immediacy and student motivation is not the first of its kind. More specifically, the purpose of the following study is to study the effects of instructor immediacy and student trait motivation on student state motivation and cognitive learning. The more immediacy is studied from different perspectives, the closer the research comes to establishing a clear relationship between immediacy and motivation, to the benefit of educational practices.

Immediacy

The concept of immediacy has been traced as far as back as Mehrabian's definition from the late 1960's (Mehrabian, 1968; Wiener & Mehrabian, 1968). As a psychologist, Mehrabian's

work was initially conducted for the purposes of analyzing nonverbal communication and assessing behavior modification methods. Mehrabian (1972), described immediate behaviors as “...those which increase the mutual sensory stimulation between two persons” (p. 6). He explained that immediacy had nonverbal applications which include touching, distance, forward lean toward addressee, eye contact, and body orientation (p. 25). He also isolated verbal immediacy to find that its use was directly correlated with liking toward the subject receiving the immediate behavior (p. 31).

This tied into Mehrabian’s background in behavior modification methods, specifically in the area of behavioral therapy. He found that if people could first change their behaviors, then, with enough repetition, their beliefs and attitudes would eventually change to consistently follow the behaviors they initiated (Mehrabian, 1978). This concept can be applied to the context of education by stating that even if an instructor does not feel (or wish to feel) psychologically close with a student, by simply going through the behavioral motions, he/she could eventually change his/her own attitude to feel true psychological closeness to the student.

Cultural implications will not be the main focus of this thesis research because prior research (to be discussed next briefly) has determined that this is not a significant confounding variable. This began with Mehrabian, as he continued to use his definition of immediacy in the context of culture by defining norms for immediacy, posture, proxemics, and positions; in order to maximize psychological closeness, ideal measurements for distance between two people communicating can vary across cultural norms. With the same research interests in mind, Collier and Powell (1990) assessed whether student culture had any role in determining the effectiveness of immediate instructor behavior. The authors frequently mentioned in their analyses that

although their small sample sizes for each culture were limited for the level of representation to the greater population, their findings were still of value. For each cultural group studied (Anglo-American, Latino, African-American, and Asian-American), the role of immediacy was significant at either the first or the second point of data collection during the semester. The values assigned to the acts of immediacy varied interculturally (immediacy as expressiveness, effectiveness, separate from student performance...) (p. 138) but all still played a role in the levels of student learning that were reported. The implications of this research indicate that emphasis should be placed on the values that are intraculturally assigned to immediate behaviors (verbal and nonverbal), and be taken into consideration when instructors plan out their lessons. It is important to find ways to reach each kind of student in the classroom.

McCroskey, Sallinen, Fayer, Richmond, and Barraclough (1996) investigated the differences in how immediacy is perceived in different cultures. Overall, in each culture identified (Australia, Finland, Puerto Rico, and United States), immediacy was found to have a positive effect. Differences realistically lie in intracultural expectations; people typically expect someone of their own culture to know the internal expectations for immediacy in that culture and can be disappointed if others under/over communicate immediacy. These results and those of other similar studies show that regardless of the culture a person identifies with, immediacy is found to be a good thing.

Research on other applications of immediacy is referenced below to make plain the importance of immediacy for understanding many human behaviors. However, this will also be presented briefly as the applications of immediacy that are most significant to this thesis, learning and motivation, will be the main focus in later sections of this literature review.

Kelley and Gorham (1988) studied the effects of immediacy on short-term recall of information. They made a case for using memory recall as an operationalization of knowledge retention, which has already been considered to be a dimension of cognitive learning. By coding instructor nonverbal behavior and student recall frequencies, they found a direct relationship between immediacy and cognitive learning. Later, immediacy was linked to college student attendance and perceptions of instructor verbal aggression by Rocca (2004) when she found a negative relationship between student reported absences and instructor immediacy, and also a positive relationship between reported absences and instructor verbal aggression. Additionally, student perceptions of instructor credibility have been found to be higher for instructors displaying verbal caring (verbal immediacy) over those displaying nonverbal immediacy and those immediate instructors were perceived as more credible overall (Teven & Hanson, 2004; Schrodtt & Witt, 2006).

Now that immediacy has been defined, shown to produce effects independent of culture, and proven useful for understanding other contexts, it is important to understand how immediacy can be applied to the process of learning.

Learning

Immediacy behaviors in the classroom have been a subject of interest for several decades. Typically, the goal of many of these studies is to show a link between instructor immediacy behaviors and some change in the level of student learning. According to Christophel (1990), learning outcomes can be defined in three dimensions: cognitive, affective, and behavioral. Cognitive learning stresses overall "...comprehension and retention of knowledge..." (p. 323).

Affective learning measures for student affect, or attitude toward the concept/instructor.

Behavioral learning indicates results in developmental skills (psychological, physical, motor skills) (p. 323).

Comstock, Rowell and Bowers (1995) found an inverted U curvilinear relationship between instructor nonverbal immediacy and the three types of learning. They used experimental groups to isolate three levels of immediacy (low, moderate, and excessively high), and found the most significant results with the group exposed to moderate immediacy, over those exposed to the excessively high immediacy. Their findings further endorsed Andersen's (1978) earlier findings that nonverbal immediacy was most closely linked to affective communication. Subsequent to these studies, the concept of a halo effect was considered in immediacy studies. For example, Hess and Smythe (2001) found a significant relationship between instructors that were highly regarded with increased student perceptions of instructor immediacy, credibility, and student learning.

Witt, Wheelless, and Allen's (2004) meta-analysis of studies involving teacher immediacy and student learning has been invaluable to locating useful research on this topic. They show that while many studies have continued to find ways to study each of the three types of learning, the operationalization of "learning loss" (Richmond et al., 1987) has truly furthered the research in this area. Learning loss is a self-report measure for students to assess how much they actually learned from an instructor (on a scale of one through ten), compared to how much they feel they *could have* learned from an *ideal* instructor (on a scale of one through ten). It is calculated by subtracting the actual score from the ideal score; so the smaller the value, the less learning lost, the more cognitive learning. Confidence testing is a newer method for evaluating learning

assessments (King & Witt, 2009), but it was not found to have a significant relationship with immediacy.

As I will continue to demonstrate later in this paper, the concepts of liking and immediacy are not foreign to one another. To tie this into Mehrabian's book on Basic Behavior Modification (1978), we can deduce that when teachers use immediacy in the classroom, they are communicating to students that they (the students) are liked. And, as the following literature suggests, when students feel they have an immediate instructor they (the students) experience other effects on their levels of motivation, class performance, and instructor evaluations. The literature to follow shows that immediacy can be used as a behavior modifier to communicate to students that they are liked, which then stimulates their drive to learn so they can succeed in the classroom.

Sanders and Wiseman (1990) studied student learning and instructor immediacy from a multicultural context to find that immediate behaviors enhance student-teacher relationships (affective learning) and student learning (cognitive learning) (p. 342). They also found that culture was associated with different perceptions of instructor immediacy behaviors, and that overall learning (cognitive, behavioral, and affective) increased with immediate instructors. Additionally, Andersen (1979) initiated a study to use trained observers to verify perceived instructor immediacy to supplement student self-reports and found that the student self-report scores were highly reliable as they were quite consistent with observer scores (p. 345-346).

Relationships between immediacy and student learning were examined from a different direction when Richmond, Gorham, and McCroskey (1987) began to identify threshold effectiveness for different levels of immediacy. They supported previous findings by showing

that immediacy behaviors were significantly related to cognitive learning, but furthered the research by suggesting that the relationship between these two concepts could be nonlinear. Moderate levels of immediacy may still be necessary for cognitive learning and low immediacy may suppress such learning. However, high levels immediacy may not continue to increase cognitive learning past the effects that moderate immediacy is able to produce.

These studies show that immediate behaviors have been strongly linked to levels of student learning. The following research is presented to explore this link by considering sources and levels of motivation.

Motivation

When considering the applications of motivation, it is important to acknowledge that it can be identified as both a trait and a state. For example, trait motivation refers to a person's natural predisposition to be either highly motivated or unmotivated. Frymier (1993) defines this trait motivation as "fairly stable and resistant to situational influences" (p. 45).

However, most can attest that extenuating circumstances often necessitate considering state motivation separately from trait motivation. Even someone who is naturally unmotivated can be temporarily motivated depending on the current state of a situation (and vice versa). Sometimes an unmotivated person suddenly gives in to a deep-seated desire that has only become salient based on seasonal urges such as enrolling as a new member at a fitness gym in January to meet a new year's resolution or joining in late spring as summer time quickly approaches. Other times, state motivation can be increased because one perceives a real incentive for accomplishing a goal. Or, we have sometimes seen otherwise unmotivated students who accept a particular challenge (e.g., class assignment) because it could finally be his or her

long-awaited opportunity to show off a personal strength. Frymier asserts that state motivation is “determined by situational influences and is not stable” (p. 45).

In order to connect the concepts of immediacy, learning, and motivation, it is important to note that Frymier extended her above definitions of trait and state motivation. Frymier concluded that teacher behaviors could clearly be that “situational influence” for student levels of state motivation which could then affect student levels of learning. She reported that students with any level of trait motivation benefited from a highly immediate instructor. She also found that immediacy’s greatest impact on motivation occurred at mid-semester for students who began with low trait levels of motivation (p. 460-461).

Christophel and Gorham (1995) went on to design a test-retest study of student motivation, teacher immediacy, and perceived sources of motivation and demotivation in college classes. Since their study is instrumental to understanding the emphasis of this thesis, it will be described more in depth than any other study. The methods used in this study will also be revisited later.

In their study, Christophel and Gorham (1995) attempted to discover the causes of student perceptions of personal motivators and demotivators, and if they were dependent on instructor immediacy. Their research questions of interest for the purpose of this thesis include “Does student state motivation change over the course of the semester?”, “Does teacher immediacy change over the course of the semester?”, and “Is there a consistent relationship between teacher immediacy and student state motivation across the course of the semester?” (p. 295).

To gain insight to these research questions, Christophel and Gorham gathered a participant sample of 319 undergraduate students. Students were asked to participate in each of two tests – the first was administered during the third and fourth week of the semester, and the follow-up re-test was scheduled for the twelfth and thirteenth week of the semester. There was a consistent drop out rate between both university samples of participants (twenty-two percent) (p. 295).

The student questionnaires were then divided into several sections: demographic information about the course taken most previously to the one that the test was being administered in, participant information, open-ended questions to prompt causes for personal increases and decreases in motivation, state motivation, and teacher immediacy. Results showed that most of the 319 students were in senior class standing, medium-sized classes (16-30) students, and were formatted as lectures. Of the instructors of the course that students had taken most previously to the one that the test was being administered in, the majority were male versus female.

They found that student self reports of state motivation did change over the course of the semester along with their reports of perceived teacher immediacy and that perceptions of overall teacher immediacy significantly increased for nonverbal immediacy over the course of the semester (only a nonsignificant increase was found for verbal immediacy) (p. 298).

Christensen and Menzel (1998) also searched out the relationships between student learning, motivation, and instructor immediacy. They asked students to identify frequencies in instructor uses of immediate behaviors and compared levels of student self-reported motivation to the instructor levels of immediacy. As instructor levels of immediacy increased, students

reported higher levels of motivation. Again, this finding was more significant for nonverbal immediacy when compared to verbal immediacy in instructors.

The research presented above links empirical findings involving immediacy, learning, and motivation to explore the following trend: Student perceptions of instructor immediacy affect student levels of motivation (Christensen & Menzel, 1998; Christophel, 1990; Christophel & Gorham, 1995; Frymier, 1993; Gorham, 1988)), which then affect student learning (Jordan, 1989; Kelley & Gorham, 1988; McDowell, McDowell, & Hyerdahl, 1980; Gorham, 1988; Chesebro & McCroskey, 2000; Comstock, Rowell, & Bowers, 1995; Hess & Smythe, 2001, Christensen & Menzel, 1998; Menzel & Carrell, 1999).

To establish consistency with previous research, the following hypothesis is proposed:

H₁: There will be a main effect for immediacy such that students who report high levels of instructor nonverbal immediacy (NIB) will report higher levels of state motivation (SMS) and cognitive learning (CL) than students who report a low level of instructor immediacy.

The next connecting link that will be proposed is that of student motivation in the context of Petty and Cacioppo's Elaboration Likelihood Model, and their concept of need for cognition.

Elaboration Likelihood Model

The Elaboration Likelihood Model (ELM) was first developed by Petty and Cacioppo (1986) to explain the process of how people interpret messages that they are exposed to. They found that messages are processed by either central route processing (using cognitive resources to thoroughly process) or peripheral route processing (using peripheral cues or decision rules that

influence persuasion). Receivers who tend to use central route processing possess higher levels of motivation and ability than receivers who use peripheral route processing. This increased motivation and/or ability to process the message is influenced by both dispositional and situational factors. Additionally, if a receiver is persuaded after centrally processing a message, the persuasion has a longer lasting effect than had the receiver been persuaded through peripheral route processing. The reason for this goes back to the definition of central route processing as it requires more cognitive effort which means a closer examination of the quality of the persuasive message and more substantive attitude change.

Peripheral route persuasion often leads to a shorter lasting persuasive effect because the receiver was simply swayed by a factor that was external from the message. Another message with more attractive peripheral cues could soon replace the original peripheral persuasion because the processing has no regard for the actual quality of the message (Petty, Priester, & Brinol, 2002).

The ELM has been used to study persuasive attempts to change attitudes or beliefs of people in many situations. It has been heavily used to study health communication tactics in informative advertisements. For example, Keys, Morant and Stroman (2007) found that celebrity status was a salient factor in persuasive messages to black youth populations about the spread of HIV/AIDS through unprotected sex.

The current research will emphasize the pedagogical uses of ELM to study persuasion and education in the classroom. When determining which ELM route a person will use, it is important to understand that the ELM model relies the factors of motivation and ability. Petty, Priester, and Brinol (2002) list variables for motivation to include relevance, source

trustworthiness, source stigma, whether argument is phrased as question or assertion, number of message sources, and expectedness of argument. Their list of variables for ability include repetition, distraction, speed of speaker's speech, and message disruptions.

The area of ELM that is most closely related to the motivation issue already discussed in this paper is that of need for cognition (NFC). Cohen, Stotland, and Wolfe (1955) described this variable as "a need to structure relevant situations in meaningful, integrated ways. It is a need to understand and make reasonable the experiential world" (p. 291). Cacioppo and Petty (1982) later proposed the study of NFC as one's "tendency to engage in and enjoy thinking" (p. 116). In general, NFC can be viewed as a personality trait, or natural predisposition.

Cohen's research alone (1957) and with Stotland and Wolfe (Cohen et al., 1955) found that individuals who were high in NFC more carefully analyzed communications as opposed to those low in need for cognition. This can be connected to the ELM in that if someone is naturally high in NFC, they are more likely to use central route processing when elaborating on messages. Since NFC is a natural predisposition that describes a person's willingness (and joy of) elaborating on messages, it can be comparable the concept of trait motivation.

Using this operationalization of trait motivation, the following exploratory research questions are posed:

RQ₁: Will students who report high trait motivation (NFC) also report (a) higher state motivation (SMS) than students who report low state motivation and (b) higher cognitive learning than those students who report low cognitive learning?

RQ₂: Will immediacy and trait motivation (NFC) interact to affect student self reports of (a) state motivation and (b) cognitive learning?

Conclusion

To restate, Christohpel's (1990) study showed that immediacy affects state motivation, and not trait motivation. Increases in state motivation result in temporary effects because as soon as the state changes (i.e., student leaves classroom with immediate instructor), the trait motivation becomes the default again. In order to connect the concepts of immediacy and ELM, the temporary effect of state motivation can be compared to the temporary effect of peripheral route persuasion and processing. If peripheral route processing only results in temporary short-term changes in beliefs or attitudes (persuasion), and immediacy can only significantly affect student levels of motivation in the classroom for a temporary amount of time, can we classify immediacy as a peripheral cue?

Correspondingly, trait motivation has long lasting effects just as central route persuasive efforts result in longer lasting changes in attitudes and beliefs. If immediacy can be studied as an ELM peripheral cue, can trait motivation be studied as ELM's construct of NFC?

CHAPTER TWO: METHODOLOGY

Participants

Students enrolled in undergraduate general education courses in the College of Sciences at the University of Central Florida in Orlando, Florida were asked to voluntarily participate in this study. While undergraduate student surveys are typically disparaged as simply constituting a convenience sample, they are actually the most desirable sample for the purposes of this research on student learning, motivation, and perceptions of instructor immediacy.

Procedure

Student self-reports were used to measure student perceptions of cognitive learning, motivation, and nonverbal instructor behaviors. Participants anonymously completed a survey that tested for many different areas of motivation and instructor immediacy. Surveys were distributed in college classrooms during an early summer semester, as opposed to a later summer semester, in order to exclude any “first time in college” students who typically enroll in later summer courses that begin after typical high school graduations. It was a priority to obtain information about nonverbal behaviors for only college instructor (rather than high school instructors) to maintain consistency with previous research and findings in this topic.

Instrumentation

The scales used in this study were adapted from previously established research and are listed below in the order in which they were used in the survey.

The Nonverbal Immediacy Behaviors (NIB) Instrument was utilized in this study as implemented by Christophel (1990) and Richmond *et al.* (1987) and asks students to identify the

frequency of specific instructor nonverbal behaviors in the classroom. While this thesis study used the NIB mostly in its original form, it was slightly adapted by removing the item of “Touches students in the class” as our modern state of the world no longer classifies this as an appropriate measure for perceived instruction. Significant validity for NIB has been confirmed (Gorham, 1988; Christophel, 1990; Gorham & Zakahi, 1990; Richmond et al., 1987) and Gorham and Zakahi (1990) used the NIB to find that many student self reports and instructor self reports of instructor immediacy were correlated at .70. Richmond *et al.* (2003) later revised their nonverbal immediacy scale, but her revised version was not used because another main focus of this research project was to further previous work (Christophel, 1990 in particular). Rock and Witt (2009) also used this justification when describing their choice to utilize a more authentic nonverbal immediacy scale as well.

Participants in this study were asked to respond to the NIB prompts by evaluating the instructor in the course they attended most recently prior to the course in which they were given the questionnaire. This technique was also used by Christophel (1990) because there is an underlying assumption that instructors for undergraduate general education courses generally have more immediate personalities and/or have been trained more extensively in immediate behaviors as this is always a pertinent topic for those teaching courses that are required (not electives) for students. This method also allows for a more diverse range of course subjects and instructors. Nonverbal immediacy (as opposed to verbal immediacy) was selected to be measured in this study as prior research (Christophel, 1990; Christensen & Mendel, 1998) has found that nonverbal immediacy has a higher correlation with learning than verbal immediacy.

Table 1 Nonverbal Immediate Behaviors (NIB) Instrument

Below is a series of descriptions of things some teachers have been observed doing in some classes. Please respond to the items in terms of the course you attended most recently prior to the one in which you received this survey. For each item below, please circle your response according to the scale listed below. You should only circle ONE answer for each teacher behavior item.

Scale: Never = 1 Rarely = 2 Occasionally = 3 Often = 4 Very Often = 5

1. Sits behind desk while teaching.*
2. Gestures while talking to class.
3. Uses monotone/dull voice when talking to the class.*
4. Looks at the class while talking.
5. Smiles at the class while talking.
6. Has a very tense body position while talking to the class.*
7. Moves around the classroom while teaching.
8. Sits on a desk or in a chair while teaching.*
9. Looks at board or notes while talking to the class.*
10. Stands behind podium or desk while teaching.*
11. Has a very relaxed body position while talking to the class.
12. Smiles at individual students in the class.
13. Uses a variety of vocal expressions when talking to the class.

* Presumed to reflect *nonimmediate* behaviors; reverse scoring required to assess immediacy.

The Student Motivation Scale (SMS) used in this study was previously used by Beatty and Payne (1985), Christophel (1990), and Richmond (1990). Christophel used this scale to measure both state and trait motivation by rephrasing the prompt twice for the same questions. The first time the students received these prompts, they were told, “These items are concerned with how you feel in general about taking classes...” The second instance of these questions in the questionnaire, asked students the same questions but instead prompted, “These items are concerned with how you feel about the class you take immediately preceding this class...”

The SMS prompts were used in this thesis to establish reliability and validity prior to manipulating the rest of Christophel’s methodology by measuring trait motivation with NFC. The SMS scale in this thesis study was slightly adapted from that used by previous researchers by removing the last five prompts as they appeared to be slightly repetitive.

Table 2 State Motivation Scale (SMS)

Please circle the number toward either word which best represents your feelings about the course you attended most recently prior to the one in which you received this survey.

Motivated	1	2	3	4	5	6	7	Unmotivated*
Interested	1	2	3	4	5	6	7	Uninterested*
Involved	1	2	3	4	5	6	7	Uninvolved*
Not stimulated	1	2	3	4	5	6	7	Stimulated
Don't want to study	1	2	3	4	5	6	7	Want to study
Inspired	1	2	3	4	5	6	7	Uninspired*
Unchallenged	1	2	3	4	5	6	7	Challenged
Uninvigorated	1	2	3	4	5	6	7	Invigorated
Unenthused	1	2	3	4	5	6	7	Enthused
Excited	1	2	3	4	5	6	7	Not excited*
Aroused	1	2	3	4	5	6	7	Not aroused*
Not fascinated	1	2	3	4	5	6	7	Fascinated

* Presumed to reflect *un*motivated behaviors; reverse scoring required.

The Learning Loss scale developed by Richmond *et al.* (1987) was used in this study in order to collect student reports on the amount of cognitive learning they engaged in. Using student self-report measures to identify student learning is one of the most commonly accepted forms of collecting these data. After all, who better to report on what a student learned than the student? (Lang, 2007). McCroskey *et al.* (1996) also found that student self reports were better measures for cognitive learning since final grades in the class do not always equal mastery of subject matter, there is no way to control for knowledge that students had prior to even taking the class, exams are not always designed properly by instructors, and some component of an undergraduate course usually has an administrative component (i.e., attendance, late work). While student self-reports are not the most direct form of measuring learning, they are very close. Cognitive learning (CL) was evaluated by reversing the learning loss score.

Table 3 Cognitive Learning/Learning Loss Measure (CL)

On a scale of 1–10, how much are you learning in the course immediately preceding this course, with 1 meaning you learned nothing and 10 meaning you learned more than in any other class you’ve had? (circle one)

1 2 3 4 5 6 7 8 9 10

On a scale of 1–10, how much do you think you could have learned in the course immediately preceding this course had you had the ideal instructor?

1 2 3 4 5 6 7 8 9 10

Note: Learning loss calculated by subtracting score from item #1 from item #2. Cognitive learning (CL) score identified by reverse scoring learning loss calculation.

As mentioned earlier, trait motivation was measured by using the concept of need for cognition (NFC). The scale used in this study was previously used by Thompson (1995) and has the most useful combination of questions/prompts that were appropriate for the subjects of immediacy, learning, and motivation.

Table 4 Need for Cognition (NFC) Scale

Please circle the number on this scale which best represents your feelings about yourself in general.

Scale: Strongly Disagree = 1 No Opinion = 4 Strongly Agree = 7

1. I like tasks that require little thought once I’ve learned them.*
2. I find a lot of satisfaction in deliberating hard and for long hours.
3. The idea of relying on thought to make my way to the top does not appeal to me.*
4. I only think as hard as I have to.*
5. I prefer thinking about small, daily projects rather than long-term ones.*
6. I like to have the responsibility of handling a situation that requires a lot of thinking.
7. I would rather do something that requires little thought than something that is sure to challenge my thinking abilities.*
8. I would prefer simple to complex problems.*
9. Thinking is not my idea of fun.*
10. I try to anticipate and avoid situations where there is a likely chance I will have to think in depth about something.*

*** Presumed that behaviors do *not* reflect need for cognition; reverse scoring required.**

CHAPTER THREE: RESULTS

Sample

The courses referenced by student participants ($N = 240$) were primarily taught in the College of Sciences ($n = 129$, 54%) and College of Arts and Humanities ($n = 65$, 27%); the other 46 courses were in the Colleges of Business Administration, Education, Engineering and Computer Science, Health and Public Affairs, Hospitality Management, and Medicine. These enrollments are consistent with annual university student credit hour distribution as a majority are in College of Sciences (30%), then Arts and Humanities (18.5%) (“University of Central Florida Office of Institutional Research,” 2009).

A majority of participants (60%) identified themselves as women ($n = 143$), 38% as men ($n = 92$), and 2% no response ($n = 5$). This is fairly consistent with university data as the majority of undergraduate students are categorized as female (55%), then male (45%) (“University of Central Florida Office of Institutional Research,” 2009).

The most common age range of participants was between 18 and 22 years of age ($n = 214$), some were between 23 and 29 years of age ($n = 19$), 31 to 37 ($n = 3$), 41 to 49 ($n = 3$), and no response ($n = 1$). When asked to identify class standing, most reported as sophomores ($n = 104$), then juniors ($n = 63$), seniors ($n = 39$), freshmen ($n = 28$), and other ($n = 6$). University class standing results differ slightly (majority 38% seniors, 28% sophomores, 17% freshman, 16% sophomores) (“University of Central Florida Office of Institutional Research,” 2009). It is expected that the difference in class standing results from those surveyed and those in university reporting is due to the nature of student enrollment in general education courses as they typically attract beginning undergraduate students.

Additionally, the participant self-reports of race identified a majority (57%) of White/European American ($n = 137$), then Black/African American ($n = 31$), Asian/Asian American ($n = 17$), Mixed Race ($n = 17$), and other ($n = 23$). A majority of 68% did not identify as Latino/Hispanic ($n = 164$), while 15% did ($n = 37$), and 16% did not respond ($n = 39$). University data also reveal a majority (67%) White, then 14% Hispanic, 9% Black, 5% Asian, 1% other, and .4% American Indian (“University of Central Florida Office of Institutional Research,” 2009).

Scale Reliability

Cronbach’s alpha analyses were performed for each scale and showed that each was reliable. The scores ranged from .77 to .82 which is consistent with reliability scores of the source from which each scale was previously found:

Table 5 Scale Reliability Analyses

Scale	Scale reliability (α)	Established scale reliability (α)	
NIB	.77	.73 - .89	(Christophel, 1990)
SMS	.91	.95 - .96	(Christophel, 1990)
NFC	.83	.82	(Thompson, 1995)

Procedures for Data Analysis

Some self-reported data did not conform to the response categories that were offered as options in the survey. If a student circled two responses for the same survey measure, the higher of the responses was recorded and considered for data analysis. Additionally, several learning loss scores ($n = 49$) calculated as negative values. These were considered to be theoretically unsound, and removed from data consideration and recoded as no response.

In order to assess the hypothesis and research questions, definitions for high and low scores were established for both of the independent variables (NIB and NFC). These high and

low scores were assigned by analyzing the frequencies of scale measures and removing the middle 20% of result frequencies for both scales. Those in the lower 40% were assigned to a condition of “low” and those in the top 40% were assigned to a condition of “high” for both the NIB and NFC scales.

Procedures for Condition Groups

The frequencies for each scale’s total were divided into five equal percentiles in order to establish the highest and lowest 40% of each scale. Based on these percentiles, the NIB scores that were coded as low were all scores 52.00 and below and all scores 55.80 and above were coded as high. Scores for NFC were coded as low if they were 43.60 or lower, and high if they were 49.00 or higher. More information about the statistics for these scores is listed in the tables below:

Table 6 Condition Distribution by Percentiles

		NIB	NFC
N	Valid	227	228
	Missing	27	26
Percentiles	20	48.00	39.00
	40	52.00	43.60
	60	55.80	49.00
	80	58.00	56.00

Table 7 Condition Distributions

N		
NIB	low	63
	high	61
NFC	low	60
	high	64

Once the scores in the appropriate percentiles were coded as low or high, the descriptive statistics were analyzed for the dependent variables of SMS and CL. The sample sizes for each

condition group ranged from 25-36. The means for SMS and CL were higher for the high NIB condition groups than for the low NIB condition groups as displayed in the table below:

Table 8 Condition Descriptive Statistics

	N	SMS		CL	
		Mean	Std. Deviation	Mean	Std. Deviation
low NIB x low NFC	35	49.23	11.34	7.17	1.89
low NIB x high NFC	28	49.57	15.52	7.32	1.76
high NIB x low NFC	25	55.56	11.64	7.8	2.40
high NIB x high NFC	36	62.25	15.31	8.42	.81

Tests of Hypothesis and Research Questions

Tests of hypothesis and research questions were evaluated using a 2 (NIB) x 2 (NFC) factorial analysis of variance to determine main and interaction effects for SMS and CL. While homogeneity of variance was not specifically achieved, the tests for analysis of variance were still used appropriately as the largest group variance in this study ($F_{CL(3, 120)} = 3.693$) was less than four times the size of the smallest group variance ($F_{SMS(3, 120)} = 1.211$) (Roberts & Russo, 1999).

Results

The hypothesis postulated a main effect for immediacy on state motivation and cognitive learning. Factorial analyses of variance confirmed a significant main effect for immediacy such that students who reported high levels of instructor nonverbal immediacy also reported higher levels of state motivation compared to those who reported low levels of instructor nonverbal immedaicy ($F_{(1, 120)} = 14.701, p = .000$) and cognitive learning ($F_{(1, 120)} = 7.381, p = .008$).

The first research question asked about a main effect for trait motivation on state motivation and cognitive learning. Factorial analyses of variance did not confirm statistical

significance for a main effect of trait motivation on state motivation ($F_{(1, 120)} = 2.012, p = .159$) or cognitive learning ($F_{(1, 120)} = 1.460, p = .229$).

The second research question asked about an interaction affect for immediacy and trait motivation. Factorial analyses of variance did not confirm statistical significance for an interaction effect for immediacy and trait motivation on state motivation ($F_{(1, 120)} = 1.639, p = .203$) or cognitive learning ($F_{(1, 120)} = .541, p = .463$).

CHAPTER FOUR: DISCUSSION

Findings

Results showed a main effect for instructor nonverbal immediacy behaviors on student levels of state motivation and cognitive learning (statistically significant). While statistical significance was not found for a main effect of trait motivation, it was still very surprising to see how powerful immediacy could be for those who already had a high need for cognition in comparison to those who were low in need for cognition. Although a difference in state motivation and learning was found for low NFC students who had low and high instructor immediacy, the differences were considerably more obvious for those who were already high in need for cognition.

The hypothesis findings for a statistically significant main effect of immediacy on state motivation and cognitive learning were consistent with previous research (Andersen, 1978; Andersen, 1979; Christophel, 1990; Christophel & Gorham, 1995; Comstock, Rowell, & Bowers, 1995; Frymier, 1993; Hess & Smythe, 2001; Rocca, 2004; Sanders & Wiseman, 1990; Teven & Hanson, 2004). Additionally, just as Christophel (1990) showed that state motivation can increase cognitive learning, the findings in this thesis research show that increased immediacy corresponded to increased state motivation and cognitive learning.

However, the high NFC condition groups also showed a non-significant trend in means between low and high immediacy conditions on state motivation and cognitive learning. This trend of the means follows some of the established research as Frymier (1993) showed that teacher behaviors could be categorized as situational influences and that trait motivation was “fairly stable and resistant to situational influences” (p. 45). She also stated students with any

level of trait motivation benefited from a highly immediate instructor. The findings in this thesis also show low and high NFC students benefited from immediacy, but it was interesting that the trend of the means directionally supported a stronger effect for those who were already high in NFC on both dependent measures.

Limitations

Some possible alternatives for the results lie in data collection methods. While the surveys were distributed in an early summer semester to attract college students who were not in the classification of “first time in college”, the surveys were distributed at the end of that early summer semester. In some classes, the surveys were even distributed immediately prior to or immediately after the final exam. Previous research has conducted similar immediacy surveys at the end of a semester (Christophel, 1990) as part of a test-retest model, so the method of distributing at the end of the semester is not completely unfounded. However, there is still a possibility that the course’s exam schedule may have brought about a particular mindset for the class session that would be different from the mindset of an ordinary class session.

Additionally, at first analysis of data, there were negative learning loss scores. This seemed theoretically unsound because that would infer that the student reported learning more from the instructor of a previous course than they could have ever learned from an ideal instructor. This could easily mean that students were not attending to the task of the survey as carefully as they could have. Negative learning loss calculations were removed from data consideration and recoded as no response.

Additionally, the NFC scale as originally posed by Thompson (1995), is meant to be coded for a lack of need for cognition. In order to review the data for actual need for cognition,

eight of the 10 questions were reverse scored (rather than Thompson's two of ten). It's possible that the phrasing of the majority of the questions in one way (negatively), may have communicated an overall message about the scale to students.

Implications/Directions for Future Research

Overall, this research continues to show that instructor immediacy produces a positive effect on student motivation and learning. The non-significant trend showing higher means among high NFC students within the high immediacy condition merits further study. This finding is not unique in that the previously accepted definition for any personality trait (including motivation) is that it is typically stable and resistant to situational influences. This new suggestion of immediacy's effect on highly motivated students warrants more inquiry into this seemingly "stable" population.

At this time, most research on immediacy and student motivation has used other motivation scales. The choice to use NFC in measuring trait motivation may be accountable for these unexpected results. A possible direction for future research is the continued use of NFC to measure trait motivation scales in replicating past research. This is the only way to explore whether to rule out the measuring tool, or to rule it in.

Moreover, another direction for future research could explore whether immediacy's effect on high NFC students is simply because a natural manifestation of high NFC would cause them to pay closer attention to everything, including instructor behavior. It's possible that a highly immediate instructor could only heighten this natural predisposition.

Furthermore, if these data are indeed a true representation of student behavior, then this implies that universities could succeed in higher ratings of student learning by investing more in the most highly motivated students. What if these highly motivated students can still be motivated more to learn and succeed? How much does it take to really motivate these people?

If it takes only a minimal effort to motivate these already motivated people, and their drive is increased to succeed in school, then that seems to be a tremendous return for a minimal investment. Many public universities are now facing serious budget shortfalls. Future research should be directed towards determining how much a university needs to do to really motivate students. If universities can get increased results, then focusing on highly motivated students could be a remarkable place to get great return for little investment.

APPENDIX A: IRB EXEMPT REVIEW STATUS



University of Central Florida Institutional Review Board
Office of Research & Commercialization
12201 Research Parkway, Suite 501
Orlando, Florida 32826-3246
Telephone: 407-823-2901, 407-882-2012 or 407-882-2276
www.research.ucf.edu/compliance/irb.html

Notice of Exempt Review Status

From: UCF Institutional Review Board
FWA00000351, Exp. 10/8/11, IRB00001138

To: Sabrina Kalish

Date: June 19, 2009

IRB Number: SBE-09-06302

Study Title: Instructor Immediacy, Student Motivation and Student Learning

Dear Researcher:

Your research protocol was reviewed by the IRB Chair on 6/19/2009. Per federal regulations, 45 CFR 46.101, your study has been determined to be **minimal risk for human subjects and exempt** from 45 CFR 46 federal regulations and further IRB review or renewal unless you later wish to add the use of identifiers or change the protocol procedures in a way that might increase risk to participants. Before making any changes to your study, call the IRB office to discuss the changes. **A change which incorporates the use of identifiers may mean the study is no longer exempt, thus requiring the submission of a new application to change the classification to expedited if the risk is still minimal.** Please submit the Termination/Final Report form when the study has been completed. All forms may be completed and submitted online at <https://iris.research.ucf.edu>.

The category for which exempt status has been determined for this protocol is as follows:

2. Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey or interview procedures, or the observation of public behavior, so long as confidentiality is maintained.
 - (i) Information obtained is recorded in such a manner that the subject cannot be identified, directly or through identifiers linked to the subject, **and/or**
 - (ii) Subject's responses, if known outside the research would not reasonably place the subject at risk of criminal or civil liability or be damaging to the subject's financial standing or employability or reputation.

The IRB has approved a **waiver of documentation of consent** for all subjects. Participants do not have to sign a consent form, but the IRB requires that you give participants a copy of the IRB-approved consent form, letter, information sheet. For online surveys, please advise participants to print out the consent document for their files.

All data, which may include signed consent form documents, must be retained in a locked file cabinet for a minimum of three years (six if HIPAA applies) past the completion of this research. Any links to the identification of participants should be maintained on a password-protected computer if electronic information is used. Additional requirements may be imposed by your funding agency, your department, or other entities. Access to data is limited to authorized individuals listed as key study personnel.

On behalf of Tracy Dietz, Ph.D., UCF IRB Chair, this letter is signed by:

Signature applied by Joanne Muratori on 06/19/2009 02:45:35 PM EDT

A handwritten signature in black ink that reads 'Joanne Muratori'.

IRB Coordinator

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